# *Final Report*

A project under the Canada
New Brunswick Conservation
and Renewable Energy
Demonstration Program

UB16

# ENERGY BLANKET
# HOT WATER HEATER INSULATION
# KIT

REPORT COMPILED BY

**KEY INDUSTRIES LTD.**

**ST. JOHN, N.B.**

**1984**

## Canada/New Brunswick Conservation and Renewable Energy Demonstration Program

The Conservation and Renewable Energy Demonstration Program Program is administered in New Brunswick by the Energy Secretariat and managed jointly with Energy, Mines and Resources Canada. The Program is designed to help demonstrate promising conservation and renewable energy technologies, to develop public awareness and understanding of these technologies, and to create employment in new or existing industries.

Through over 100 demonstration projects in New Brunswick, a wide variety of conservation and renewable energy technologies have proven to be technically sound and economically attractive. These demonstration projects should now provide a catalyst for commercialization and lead to widespread adoption of many of these proven technologies.

This final report is based on a project which was financially supported by the Energy Demonstration Program. For further information on other demonstration projects funded in New Brunswick under this program, contact:

Conservation & Renewable
Energy Division
Energy Secretariat
P.O. Box 6000
Fredericton, N.B.
E3B 5H1
(506) 453-3897

## Programme Canada/Nouveau-Brunswick de démonstration des économies d'énergie et des énergies renouvelables

Le Programme de démonstration des économies d'énergie et des énergies renouvelables est administré au Nouveau-Brunswick par le Secrétariat à l'énergie, en collaboration avec Energie, Mines et Ressources Canada. Ce programme tente d'abord de vérifier la fiabilité des techniques de conservation d'énergie, d'accroître la sensibilité du public envers ces techniques et, enfin, de favoriser la création d'emplois au sein des industries nouvelles ou déjà existantes.

Un grand nombre de projets de démonstration se sont avérés à la fois techniquement réalisables et économiquement attrayants.

Le succès ainsi rencontré encourage la commercialisation des procédés les plus accessibles. Cela entraînerait certes l'adoption d'un grand nombre de ces techniques par les propriétaires de domiciles et par l'industrie privée.

Ce rapport final est basé sur un projet qui a reçu une aide financière du Programme de démonstration. Pour de plus amples renseignements, communiquez avec la:

Division des économies d'énergie
et des énergies renouvelables
Secrétariat à l'énergie
C.P. 6000
Fredericton, N.-B.
E3B 5H1
(506) 453-3897

## D I S C L A I M E R

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## D E N I D E R E S P O N S A B I L I T E

Ce rapport, financé conjointment par le Secrétariat à l'énergie du Nouveau-Brunswick et Energie, Mines et Ressources Canada, est publié à titre de service public. Les gouvernements fédéral et provinciaux n'assurent aucunement l'exactitude du contenu, l'efficacité des appareils et des procédés et, enfin, les économies que préconise le rapport. L'utilisation de ces systèmes de conservation d'énergie ne doit, à aucun moment, empiéter sur les droits d'autrui.

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## 1. EXECUTIVE SUMMARY

The "Energy Blanket" project consisted of the manufacturing and marketing of a do-it-yourself water heater insulation kit which, when applied to domestic hot water heaters, adds an R value of R-8.

The objective of the project was to make the general public aware of the fact that they could save energy and money by simply installing this "blanket" of insulation on their hot water tanks.

The demonstration was successful to the extent that approximately 360 blankets were sold and 12 physically handicapped people were employed for a little over a year.

The "Energy Blanket" sold for $30.00 and standby tests indicate that savings of as much as $10.00 per year could be realized, thereby giving a payback of 3 years.

## 1. SOMMAIRE

Le projet intitulé "couverture isolante" consiste en la fabrication et la commercialisation d'une enveloppe isolante pour chauffe-eau, à installer soi-même. Lorsque mise en place, cette enveloppe ajoute une valeur isolante de R-8.

Le but du projet est de rendre le public conscient du fait qu'il est possible d'économiser énergie et argent en installant simplement cette "couverture" isolante sur leur réservoir d'eau chaude.

La démonstration a été un succès dû au fait qu'approximativement 360 couvertures se sont vendues et que 12 personnes physiquement handicapées ont été employées pour un peu plus d'un an.

La "couverture isolante" se vend 30,00$. Les résultats des tests effectués indiquent qu'une économie pouvant atteindre 10,00$ par année est possible, représentant alors une période de recouvrement de 3 ans.

## 2. INTRODUCTION AND BACKGROUND

The main reason for initiating this project was to convince the general population that it could reduce the amount of energy required to produce its domestic hot water and to determine exactly how much energy and money could be saved in the home through the application of this "Energy Blanket".

In early 1980, Key Industries requested financial assistance from the Marketing Branch of the N.B. Department of Commerce and Development to market a product which Key Industries was developing. The Department did not consider the product suitable but recommended that Key Industries Ltd. take a close look at an insulation kit for water heaters being manufactured by a firm in Saskatchewan. Samples were obtained, some improvements made and a new product called "The Energy Blanket" was developed.

The estimated energy savings were as shown in Appendix II, Table III.

## 3. DESCRIPTION OF THE DEMONSTRATION

The "Energy Blanket" consists of pre-cut pieces of 2½" (RSI 1.5) insulation with vinyl-backed protective facing, pre-cut tape and

diagrammed installation instructions for quick assembly, all packaged in an attractively designed box with a retail price of about $30.00. Three hundred and sixty kits were sold through twelve dealers.

## 4. OBSERVATIONS DURING INSTALLATION AND MONITORING

Standby tests were conducted on three different makes of water heaters of two different sizes. These tests were conducted by two independent groups. The results can be summarized as follows:

TABLE I:

| Heater Type | Tested by | Water Storage Temperature | Ambient Temp. | Annual Energy Savings | |
|---|---|---|---|---|---|
| | | | | kWh | $ |
| Cascade 40 | J.Kipping, PEng. | 65.6°C | 20°C | 276 | $13.80 |
| Cascade 60 | J.Kipping, PEng. | 65.6°C | 20°C | 318 | $15.90 |
| Cascade 40 | NB Power | 65.0°C | 18°C | 198 | $ 9.90 |
| G.S.W. 40 | NB Power | 52.0°C | 11°C | 205 | $10.26 |

An interesting note that should be made at this point is that, while it is true that the "Energy Blanket" will save energy, it is also true that by simply reducing the storage temperature, greater savings can be incurred. For instance, referring to Table I.

Appendix I, you can see that if you reduce the storage temperature from 150°F to 120°F, you can save 379 kWh/month which is more than the 276 kWh/month that you would save by simply installing the blanket. However, if high water storage temperatures are absolutely necessary, than there is no doubt that the "blanket" would be very worthwhile.

## 5. COST/BENEFIT ANALYSIS

The Energy Secretariat contributed $1,200 to this project and the Federal Government provided $4,800 through the Conservation and Renewable Energy Demonstration Program. Key Industries provided goods and services in kind.

From the consumer's point of view, a purchase price of $30.00 and a typical annual saving of $10.00 would yield a payback of 3 years.

## 6. CONCLUSIONS

1. The project was both interesting and successful. Three hundred and sixty kits were sold.

2. While it was demonstrated that the "Energy Blanket" does

help in saving energy, more energy can be saved by simply reducing the storage temperature of the tank.

3. There was very little repeat ordering by the dealers and the latter noted that their sales occurred only during the periods when the product was advertised.

4. Even though the average payback for this item is good (3 years), people still seem reluctant to spend the $30.00 cost in order to save $10.00 per year.

## 7. RECOMMENDATIONS

We recommend that everyone with a hot water tank first reduce its storage temperature. Then, if they want to maximize their energy savings, they can purchase and install the "Energy Blanket". Certainly an Energy Blanket is recommended where a higher DHW storage temperature is desired or necessary.

Of the promotional methods used by this project the most cost effective was, in our estimation, the daily newspapers. This was also the major medium utilized during our project. The T.V. ad appears to have been the least effective relative to the cost, however this is probably due to the use of a still picture. A more sophisticated T.V. ad using actors or cartoons showing action would no doubt have been more effective, but would have cost much more than the ad cost. The brochure is a good promotional tool which we will continue to use via our dealers and displays. The brochure would appear to be effective in generally promoting energy saving strategies of which the Energy Blanket is but one method of reducing energy consumption.

# Key Industries Markets Energy Saving Product

SAINT JOHN, N.B.

With the price of energy continuing to rise, energy saving products are enjoying high consumer demand.

A most inventive and useful energy saving product called the 'energy blanket' is being produced and marketed by Key Industries of Saint John.

"The energy blankets are kits which are wrapped around the outside of a standard domestic hot water heater and can save an estimated $17.00 per year on an average family's hot water bill," says Key Industries director James Rogers. "That may not sound like a great deal, but in energy savings, an item by item approach is what ends up in savings. The energy blanket is one smart energy saving move among many that cost-conscious consumers should be making."

The energy blankets are made in kit form, with specially cut vinyl material designed to fit snugly over the cylindrical shape of a standard domestic water heater. The kits come in 30, 40 and 60 gallon sizes and corresponding 20", 22" and 24" diameters with simple assembly instructions and everything needed to install them. They have an insulation value of R-8.

The kits were formerly available only through Key's location in Saint John, but the company has recently changed its marketing to retail outlets like hardware stores and building supply dealers. The kit is now carried by five outlets in New Brunswick and three in Nova Scotia.

## An Energy Saving Device

Consumer demand is expected to increase when people begin to realize that the hot water heater is the appliance that consumes the most energy in the average home.

According to Rogers, a simple test is to put a blanket on the top of your hot water heater. If there is heat trapped after a short time, then it's wise to invest in an energy blanket. Production of the kits in Key's plant could be as high as 100 per day.

Key Industries is a non-profit organization which provides employment and ancillary services for disabled men and women in the region. A total of 50 employees are now working in the plant, with the expectation that production of the energy blanket will open up new jobs.

Key Industries, under Key Industries Silk Screen Division, specializes in promotional products such as T-shirts, decals, crests and inscribed binders.

The company is also marketing an antiqued promotional box that gives an old fashioned feel to any product. Five thousand of the boxes were used successfully by Moosehead Breweries to export beer to the United States. Negotiations are now underway to manufacture a further 50,000 of the boxes.

Other Key activities include making promotional buttons, survey stakes, wooden reels for plastic pipe pallets and packaging screws.

See how an

# Energy Blanket

Do-It-Yourself Water Heater Insulation Kit

## can lower your water heating costs.

An Energy Blanket is an insulation kit designed to fit over electric or oil-fired water heaters. It can be installed by practically any home-owner in a matter of minutes. When installed it will keep heat inside your water heater where it's needed. Water heaters consume more energy than any other appliance in your home. If your present water heater is not insulated you could be wasting up to 30% of the energy required for your hot water heating.

Many water heaters have minimal insulation. An Energy Blanket adds an R-value of R-8 to your water heater eliminating much of your heat loss.

The Energy Blanket is manufactured by Key Industries and is available at the following locations:

Alternate Heating - Saint John
Valley Home Centre - St. Stephen
J.L. Simms Ltd. - Fredericton
Crosswinds Thrift Store - Sussex
Garland's Hardware - Moncton

**Address dealer enquiries to:**

**Key Industries**
**26 Kiwanis Ct., Saint John, N.B., E2K 4L2**
**Telephone: 693-3371**

## Appendix I - Information Transfer

### Promotion of the Energy Blanket

The major objective of this project was to educate the consumers of New Brunswick to the advantages of carrying out energy saving activities and in particular the savings that could accrue from the purchase and installation of Energy Blankets. At the same time we planned to acquire dealers in New Brunswick to retail this product.

The Energy Blanket was promoted by ads in the following dailies: Telegraph Journal and Evening Times Globe; N.B. Farm and Forest; The Kings County Record; The Moncton Times - The Moncton Transcript; L'evangeline; The Atlantic Advocate; The Daily Gleaner. Six television ads were carried on ATV New Brunswick using pictures of our product. Twenty-four, 30 second radio spots were carried on C.F.B.C. Radio. Last but not least, six thousand brochures were printed for distribution primarily through N.B. dealers. The Energy Blanket was further promoted by displays at exhibitions, etc. radio and T.V. interviews and newspaper and magazine write ups.

*Consulting Engineering*
**J. E. KIPPING, P. ENG.**
R.R. #6, FREDERICTON, N.B. (506) 363-4246

RECEIVED
MAY 28 1981
ENERGY SECRETARIAT

May 25, 1881

Mr. Dan Clark
Energy Secretariat
Government of New Brunswick
P.O. Box 6000
Fredericton, N.B.

Dear Dan,

Re: Key Industries Energy Blanket Brochure

Please find a marked-up copy of the energy blanket brochure enclosed.

The estimated annual savings relayed by you earlier today by telephone were for a 150°F storage temperature. The brochure indicates " independent tests at a water storage temperature of 130°F. To eliminate confusion as to which was intended, the dollar savings which I would confirm are shown for both 130 and 150 on the enclosed copy.

Yours very truly,

John E. Kipping

Appendix II con't - Energy savings from installation of the Key Industries "Energy Blanket" on Cascade 40 and Cascade 60 electric water heaters. (by J.Kipping P.Eng.)

The energy loss from the storage tank of an electric water heater at a water temperature of 150°F and a room temperature of 59°F (15°C) is 1146 kWh/year and 1345 kWh/year for 40 and 60 gallon tanks respectively.

After installation of the Energy Blanket, which consists of 2.5 inches of fiberglass insulation R8 thermal resistance, the energy loss for the same temperature conditions will be 840 kWh/year and 992 kWh/year for the 40 and 60 gallon tanks respectively.

The energy savings are therefore 306 kWh/year and 353 kWh/year.

The energy losses before and after installation of the Energy Blanket and the corresponding energy savings are shown in the enclosed Tables 1 through 6 for combinations of water temperatures of 120, 130, 140 and 150°F and ambient air temperatures of 10, 15, and 20°C for 40 and 60 gallon tanks.

The energy savings for combinations of any water temperatures between 120 and 150°F and ambient air temperatures of 10,15 and

20°C are shown graphically in Figure 1 for 40 gallon tanks and in Figure 2 for a 60 gallon tank.

The energy saving for ambient air temperatures between 10 and 15°C and between 15 and 20°C for any water temperature between 120 and 150°F can be interpolated from Figures 1 and 2.

The data contained in these tables and figures have been determined from water heater heat loss characteristics which were established by actual measurements on standard Cascade 40 and Cascade 60 electric water heaters both without and with extra insulation. Cascade water heaters are those which conform to the construction and performance requirements specified in CSA standard C191-1973 "Performance requirements for electric storage-tank water heaters". The storage capacities are either 40 or 60 imperial gallons. The immmersion heating element size (watts) is specified. The thickness of insulation necessary to just meet the standby loss requirement of standard C191-1973 is 2 inches of fiberglass. The standby loss test method is described in the standard and this procedure was used in establishing the heat loss characteristics on which the enclosed data is based.

The result of the above performance standard has been that since 1964 virtually all electric water heaters sold in Canada have been

Cascades; ie 40 and 60 gallon tanks with 2 inches of factory installed insulation. Cascade water heaters are currently marketed nationally by Sears and Canadian Tire Corp.. They are the standard water heater of the NB Power water heater rental program. The only exceptions that I am aware of are as follows. Enheat Ltd., Sackville, NB have assembled and sold Cascade certified water heaters which contain 3 inches of insulation. The John Wood Co. of Ontario market the "Energy Saver" 40 gallon electric water heater both directly and through Sears as the "Power Miser". This water heater is factory assembled with 3 inches of insulation. The enclosed information on tank heat losses and energy savings by installing the Energy Blanket does not apply to these latter two water heaters, although it does apply to any standard Cascade. (The point is that the enclosed data is appropriate for nearly all the electric water heaters currently in service in residences.)

It is important to realize that the actual energy loss and therefore the actual savings due to retrofit of the Energy Blanket, depends on the air temperature in the space where the water heater is located. This will vary during the year at most residences. If a good average annual room temperature is known, the actual energy savings will be very closely determined by using this

temperature as the basis for determining the savings from Figures 1 or 2. (Measurements of air temperature in basements over a one year period indicate that average annual values will fall between 10 and 20°C.)

The following point should be kept in mind also when using the Tables 1 through 6 and Figures 1 and 2. For a water heater in use in a residence, the actual tank energy loss (kWh/year) for a set of temperature conditions is lower than the values shown because in use the storage tank is not always full of hot water. Cold water is drawn into the tank inlet and occupies a part of the tank volume during and after a draw of hot water until the heater element raises the temperature to the set temperature. Consequently, some of the surface of the storage tank will at times be exposed to a temperature difference less than the hot water to ambient air temperature difference. The result will be that heat loss from the tank will be temporarily reduced, and therefore less energy will be lost than the amounts shown in the Tables 1,2,4 and 5. The actual energy savings will be proportionately lower. How much lower depends on the actual volume and pattern of hot water use, which measurements show to be significantly different from residence to residence. The worse case would be for the heaviest hot water user. For a very heavy use of 100 gallons/day on the average over a year, the actual energy loss has been carefully estimated

at 89 percent of the standby loss. The values shown in Tables 1, 2, 4 and 5 are standby loss figures, ie. based on the assumption that the storage tank is always full of hot water. If the effect of use is to be taken into account then the actual savings will be anywhere between 89 and 100 percent of the values shown in Tables 3 and 6 and on Figures 1 and 2.

Additional savings which might accrue from reducing the water temperature to 120°F.

Any reduction in the storage temperature from the current factory setting of 150°F, in addition to reducing the standby loss of the tank, will also reduce the energy required to heat the water. This is due to the smaller temperature rise the water must be brought through. Since much hot water use is for constant volume rather than for constant temperature, this results in an overall saving in the energy consumed by the water heater. The amount of the savings depends on the amount of hot water used in a year. It cannot be said how much this saving would be for a particular residence since the amount of water used from house to house varies widely.

Feedback on the nergy lanket brochure and the thermo saver brochure.

The enclosed hand written notes and marked-up brochures provide some suggestions based on my experience with measurements of the energy use of water heaters.

## TABLE I

STANDBY ENERGY LOSS (KWH/YEAR)
OF A
40 IMPERIAL GALLON ELECTRIC WATER HEATER (CASCADE 40)

| WATER STORAGE TEMPERATURE | | ENERGY LOSS (KWH/YEAR) FOR INDICATED AMBIENT AIR TEMPERATURE | | |
|---|---|---|---|---|
| °F | °C | 10°C | 15°C | 20°C |
| 150 | 65.6 | 1259 | 1146 | 1033 |
| 140 | 60.0 | 1132 | 1019 | 906 |
| 130 | 54.4 | 1005 | 892 | 779 |
| 120 | 48.9 | 881 | 768 | 654 |

## TABLE 2

STANDBY ENERGY LOSS (KWH/YEAR)
OF A
40 IMPERIAL GALLON ELECTRIC WATER HEATER (CASCADE 40)
WITH AN ADDITIONAL 2.5 INCHES THICKNESS OF
FIBERGLASS INSULATION ON TOP AND SIDES

| WATER STORAGE TEMPERATURE | | ENERGY LOSS (KWH/YEAR) FOR INDICATED AMBIENT AIR TEMPERATURE | | |
|---|---|---|---|---|
| °F | °C | 10°C | 15°C | 20°C |
| 150 | 65.6 | 922 | 840 | 757 |
| 140 | 60.0 | 830 | 747 | 664 |
| 130 | 54.4 | 737 | 654 | 571 |
| 120 | 48.9 | 645 | 562 | 479 |

TABLE 3

ENERGY SAVINGS[1] (KWH/YEAR) OBTAINED BY INSTALLING AN ADDITIONAL 2.5 INCHES OF FIBERGLASS INSULATION ON THE TOP AND SIDES OF A 40 IMPERIAL GALLON ELECTRIC WATER HEATER (CASCADE 40).

| WATER STORAGE TEMPERATURE | | ENERGY SAVINGS (KWH/YEAR) FOR INDICATED AMBIENT AIR TEMPERATURE | | |
|---|---|---|---|---|
| °F | °C | 10°C | 15°C | 20°C |
| 150 | 65.6 | 337 | 306 | 276 |
| 140 | 60.0 | 302 | 272 | 242 |
| 130 | 54.4 | 268 | 238 | 208 |
| 120 | 48.9 | 236 | 206 | 175 |

(1) Determined by subtracting the value in Table 2 from the corresponding value in Table 1.

TABLE 3A

ESTIMATED ANNUAL SAVINGS ($)
AT
130°F STORAGE TEMPERATURE
AND
50°F AIR TEMPERATURE

| COST/KWH | .04 | .05 | .06 | .07 |
|---|---|---|---|---|
| 40 GALLON TANK (268 KWH) SAVING | $10.72 | $13.40 | $16.08 | $18.75 |
| 60 GALLON TANK (309 KWH) SAVING | $12.36 | $15.45 | $18.54 | $21.63 |

TABLE 4

STANDBY ENERGY LOSS (KWH/YEAR)
OF A
60 IMPERIAL GALLON ELECTRIC WATER HEATER (CASCADE 60)

| WATER STORAGE TEMPERATURE | | ENERGY LOSS (KWH/YEAR) FOR INDICATED AMBIENT AIR TEMPERATURE | | |
|---|---|---|---|---|
| °F | °C | 10°C | 15°C | 20°C |
| 150 | 65.6 | 1478 | 1345 | 1212 |
| 140 | 60.0 | 1329 | 1196 | 1063 |
| 130 | 54.4 | 1180 | 1047 | 914 |
| 120 | 48.9 | 1034 | 901 | 768 |

TABLE 5

STANDBY ENERGY LOSS (KWH/YEAR)
OF A
60 IMPERIAL GALLON ELECTRIC WATER HEATER (CASCADE 60)
WITH AN ADDITIONAL 2.5 INCHES THICKNESS OF
FIBERGLASS INSULATION ON THE TOP AND SIDES

| WATER STORAGE TEMPERATURE | | ENERGY LOSS (KWH/YEAR) FOR INDICATED AMBIENT AIR TEMPERATURE | | |
|---|---|---|---|---|
| °F | °C | 10°C | 15°C | 20°C |
| 150 | 65.6 | 1090 | 992 | 894 |
| 140 | 60.0 | 981 | 883 | 785 |
| 130 | 54.4 | 871 | 773 | 675 |
| 120 | 48.9 | 763 | 664 | 567 |

TABLE 6

ENERGY SAVINGS[1] (KWH/YEAR) OBTAINED BY INSTALLING AN ADDITIONAL 2.5 INCHES OF FIBERGLASS INSULATION ON THE TOP AND SIDES OF A 60 IMPERIAL GALLON ELECTRIC WATER HEATER (CASCADE 60).

| WATER STORAGE TEMPERATURE | | ENERGY SAVINGS (KWH/YEAR) FOR INDICATED AMBIENT AIR TEMPERATURE | | |
|---|---|---|---|---|
| °F | °C | 10°C | 15°C | 20°C |
| 150 | 65.6 | 388 | 353 | 318 |
| 140 | 60.0 | 348 | 313 | 278 |
| 130 | 54.4 | 309 | 274 | 239 |
| 120 | 48.9 | 271 | 237 | 201 |

(1) Determined by subtracting the value in Table 5 from the corresponding value in Table 4.

THE NEW BRUNSWICK ELECTRIC POWER COMMISSION
LA COMMISSION D'ÉNERGIE ÉLECTRIQUE DU NOUVEAU-BRUNSWICK

527 King Street, Fredericton, N. B.
E3B 4X1

83-03-08

ENERGY SECRETARIAT
NEW BRUNSWICK
MAR 10 1983
RECEIVED
FILE.....

Mr. George Nimegeers
Marketing Officer
Commerce & Development
P. O. Box 6000
Fredericton, N. B.

Dear George;

Over the last 7 or 8 months we have monitored the effect of the Key Industries Insulated water tank jacket on two different makes of water heaters. The tests were straight standby tests only, which is the worst case condition. The storage temperature was varied from 50°C to 65°C for the tests. Ambient temperature varied naturally from 13.5°C to 18°C. The jacket was changed 6 times, simulating 6 different tests; 3 with the jacket off and 3 with the jacket on. The results are listed below.

During this period we also monitored the standby losses of an energy efficient tank with external thermostat control, which is currently available on the market. It is interesting to note that its standby consumption compares favourably to the consumption of the Cascade Heaters with insulated jackets.

We will continue to monitor these losses at different temperatures and could have further results in another 6 to 8 months.

Sincerely,

THE NEW BRUNSWICK ELECTRIC POWER COMMISSION

Reg Gulliver

Reg J. Gulliver,
Director - Energy Utilization

c.c. A. Arseneau

ENHEAT - D.H.W. TANK - 40 GALLONS

ELEMENTS - 3000 Watts - Upper
3000 Watts - Lower

| Insulated Jacket (ON/OFF) | Ambient Temp. | Storage Water Temp. | Test Period | Meter Readings | Period KWH | KWH / Day | Savings KWH / Month | Comments |
|---|---|---|---|---|---|---|---|---|
| OFF | 18°C | 65°C | June 3 to June 22 | 7046.2 7094.3 | 48.1 | 2.53 | 16.5 | About $.81 savings/month |
| ON | 18°C | 65°C | Aug. 3 to Aug. 20 | 7345.9 7379.5 | 33.6 | 1.98 | | |
| OFF | 13.5°C | 52°C | Nov. 29 to Dec. 13 | 7858.0 7880.6 | 22.6 | 1.61 | 12.6 | About $.62 savings/month |
| ON | 16°C | 50°C | Aug. 26 to Sept. 7 | 7388.0 7402.3 | 14.3 | 1,19 | | |

G.S.W. - D.H.W. TANK - 40 GALLONS

ELEMENTS - 3000 Watts - Upper
3000 Watts - Lower

| Insulated Jacket (ON/OFF) | Ambient Temp. | Storage Water Temp. | Test Period | Meter Readings | Period KWH | KWH / Day | Savings KWH / Month | Comments |
|---|---|---|---|---|---|---|---|---|
| OFF | 11°C | 52°C | Dec. 17 to Jan. 24 | 9445.5 9517.2 | 71.7 | 1.89 | 17.1 | About $.84 savings/month |
| ON | 11°C | 52°C | Feb. 7 to Feb. 18 | 9533.2 9547.7 | 14.5 | 1.32 | | |

JOHN WOODS ENERGY SAVER - 40 GALLONS

| | Ambient Temp. | Storage Water Temp. | Test Period | Meter Readings | Period KWH | KWH / DAY | | |
|---|---|---|---|---|---|---|---|---|
| | 17°C | 55°C | Aug. 26 to Sept. 28/82 | 4186.0 4248.6 | 62.6 | 1.89 | | |
| | 18°C | 46°C | Aug.3 to Aug. 20 | 4154.9 4174.6 | 19.7 | 1.16 | | |
| | 15°C | 56°C | Oct. 19 to Nov. 2 | 4289.9 4316.7 | 26.8 | 1.914 | | |